

Hong Sit - e.

1/2 sit. - w. of body on 1 side.

Spring-Sit - 1 L. bend & sit fwd.

Deformities

A deformity is an acquired or congenital fault of position in the skeletal or motor apparatus i. e. spinal curvature, flat foot or club feet. In these there is found as a rule: shortening of certain mus. & soft parts & lengthening & weakening of their antagonistics. In most cases especially if the deformity has lasted for any length of time changes in the shape of bones are found.

Beside the obvious & sometimes slight alterations in form, deformities are frequently accompanied by functional changes, esp. in motor apparatus which are very troublesome to the patient.

In treatment of deformity the first principle is to restore faulty position to normal but in addition to this the P. must endeavor to maintain the correct position & to regain power by ex^r the normal function. To restore faulty position (to normal) correcting movements are used even in the slightest cases - these ad. produce strong, long continued stretching & shortening of m. & other soft parts. In more severe cases special orthopedic apparatus. Sometimes a forced correction with or without cutting of soft parts & crushing & remolding of bony parts. (Not in scope of physical gymnast)

Active mov. with strong M. work is used for those m. which are lengthened by deformity.

To train normal functional power the normal movements of the part are practised, maintaining the correct position as far as possible.

Postural Activity.

Herrington - demonstrated that the upright posture depends upon reflex muscular activity - this activity is a reflex dependent upon nervous impulses from the muscles themselves, and has been demonstrated only in those mus. which are constantly resisting the influence of gravity - it can be maintained for long periods without fatigue.

Bankart - he teaches that this reflex may be inhibited by overwork, worry or other mental forces & that it is to this failure of postural act. that such static deformities as scoliosis - kypholordosis, flat foot & knock knee are sometimes due. The object of gym. treatment in this type of case is to re-educate the postural reflex by means of simple free ex.

Examination of Posture

1. Place P. in front of good light - back to window.
2. Back uncovered.
3. After back is examined, do front, turning to light & notice normal pos'tn then ask for corrected pos'.
4. Take note of ft. - flat feet, knock knees.
5. When examining, take notes.

Faulty habitual position is the commonest cause of lateral curvature. The unequal weighting which thus arises acts on the bones, mus. & legs. (eg. which hold up T. & produce this curvature) Scoliosis during teen ages. And esp. at period of puberty. The rapid growth of all parts of the body esp. the legs during this period increases the liability to deformity. If one watches the development of such curvature one finds that the body at first resumes a symmetrical ^{post.} - in time free from work. After a time m. begin to accommodate themselves to the crooked position and become lengthened & shortened respectively as this takes place. The postural reflex is lost & the G. no longer realizes that her position is crooked & doesn't attempt to correct it, unless she receives treatment the deformity is liable to become fixed and structural changes take place. Phy. Gym. can do much to help 1. be observant of pupils in her care 2. mild cases corrected early & 3. early structural cases of deformities shouls b sent to a doc who in turn will send P. to proper places to be treated.

Causes of Postural Scoliosis.

1. Habitual faulty positions
2. Lack of postural tone
3. Bad positions during school hrs.
4. Position of lights in school room.
5. Heredity.
6. Girls more liable to developed Scol.

Derived

Crook lying - pelvis raised

Crook lying

Leg lift lying - =

Sit lying -

Say lying - low plinth

Stn. hy-h. apart

Prone or forward lying - face downwards fully supported
on plinth.

Arch lying - Taken from prone & arch.

Leg forward lying - Kneeling on high plinth

Arch leg forward lying - same as ↑ but arch down & up.

Side lying - on 1 side arm bent under body
(Move patient slightly over)

Leg side lying - Hip support.

Position derived from hanging

Crook hanging - P hangs with B & wall bars into
P set up with N.L at hips & knees.
Abdominal muscles.

1/2 Crook Hanging - fixed, leg raise. Change post of T.

Kyphosis often associated w. lordosis. Both may be due 2 lack of postural reflex. The marked changes in kyphosis the ligs. & mus. running in a longitudinal direction at the back of the spine & the chest become lengthened & stretched. In round shoulders the transverse mus. or back of chest esp. shoulder mus. become lengthened, those on front of C - the pectorals are shortened. The bal. betw. 2 sets of mus. is disturbed. In old stage cases the curves of clav. are prominent

Causes-

1. Old age - mus. & ligs. yield 2 wt. of B.
2. Failure of postural reflex.
3. Occupation in sed. lean. post. - studing etc.
4. If m. on fr. of C are chiefly used it will also lead 2 round shoulders.
5. Faulty clothing - 2 narrow or 2 short in front.
6. Defective sight & adenoids.

Treatment:

In treating Chil - see clothes fit properly
1. work esp. school wt. should be supervised & faulty post. corrected. Gym. treatment.
Follows gen. lines & treatment of deformities
& includes re-ed. of postural defects.
Correct post. of B's head. B's gen. H.tn should have attention & any other phy. HS defect corrected. To counteract Kyphosis u give strong, long, passive stretching

Hang w. ly. with cushion in Bk. Mounts.
w act. wth. in strong shortening in
inner range of mount. (4 long M. in bk.)
Stch. stp. grsp. sit. - Holding.

2 counteract round shoulders - 1. Passive
stch. for C. mus. Known as chest expansions
usually given w. breath. - Heave grsp st.
Heav. grsp. st. fwd. drawing. 2. Mounts w. strong
act. wth. in shortening for post. mus. of
scap - Phonobands. - Ab plane A carrying.
3. Mounts on Heave post.
Contract too big a
fach fwd. by -

Use mounts w. discrimination. → H.C.P. -
(gen. corrective post.)

1. Heave grsp. st. - ch. expansion.
2. High stch. grsp. st. -
3. L. skewd draw.

3. Hang w. cushion in bk. - Ag. on tall bars.

4. Hd. L. fwd. ly. - dbl. plane A's ↑

5. Stch. Ag. - neck rais. (carrying.)

6. Wg. - plane twisting.

7. Ach L. fwd. ly. - Holding.

8. Wg. L. lean - str. st.

9. T. rolling.

9. Stch. grsp. stp. st. - Holding. (breathing)

10. Stch. sit. 2 & send. & stch.

11. Ag. - L. pint. & clo.

12. Stch. grsp. st. - fwd. str. draw. - finish
w. P. ly. in coh. post. w. or w/out a cushion

13. Ach. L. fwd. ly.

Kyphosis angular - Disease of bone - caused by T. S., acute artrosis in that region.

Kyphosis -

Pelvis forward - curvature of lumbar vertebrae.
55°-60° from L. Mus. & lig. back of spine
tight. Shortening of flexors of hips with lengthening
of Ham strings. Failure of postural reflex
Weaknesses of Abd. Mus. Over ex. of back Mus.
Over treatment in children of kyphosis.
Excessive practise of low arch position. Habitual
wearing of high heel.

Treatment -

1. Teach correct idea of normal posture. Walk correctly. How to contract slack mus.
2. How to extend hips with kns. flexed.
3. H. slightly inverted.
4. Passive stretching to mus. & lig. of spine.
5. Short, vigorous stretchings - fwd. fwd. bend.
6. Long continued stretchings - Stch. guy rk sit.
7. Cross-sit. when Ham strings strchd.
8. long - short leg & saving
9. Act. work in strong shortening of stretched mus.

Scheme I

1. St. l. up. draw. in short sit.
2. ... 1st. own press. (Concentric work) ly.
3. ^{con} Ky. T. rais. (Repleative) - blood & abd. These mus
b. counteracted by depleative ex.
4. If H. S's lengthened - Fwd. ly. K. bend.
(con & eccentrically)
5. l. fwd. ly. - holding.

Scheme II

1. Back. sitt. - db A send + stick.
- 3 " grasp. cirk sitt - holding.
4. Short sitt db L updrav.
- 2 1/2 sitt K send + stick.
5. Neave grasp - stp stride sitt. - all translation.
6. L. fwd. by. - holding.
7. High side sitt. - T. roll.
8. Hd. long sitt - R A. upw carry.
9. Hd. L upw. lift & fwd. press
10. Hd. stp std sitt - db Plane A. carry.
11. High side sitt - C expansion.

Between moves. After move - breathing & saw +
H.C.P.

Resting Position

1. Ak ly - A - N. rest.
2. Cf. G. kyphosis also - stick. grasp - long sitt.
N. rao. (start with Chin on Chest)
3. Hang. w. cushion in B.

Flat Foot.

1) mobile - treated by gymnast.

2) spastic not " "

Inverters stretched
Everters shortened

Arches - 1. Transverse - ball of foot.

2. longitudinal - length of foot

Good sign for faulty transverse arch = pick up pencil between 3rd & 2nd toes

Knock knees often go with f.f. Inside of 3rd toe sole will be worn. Take outline of foot by wetting foot & stamping on paper.

Bad walking with more wt. on 1 foot than another - strained foot

From Oologo - Infantile

Treatment -

If due to overwt. bearing try to reduce wt. by diet. Also ed. If too fat get them to sit on stool.

If due to long walking or standing try to sit on stool for at least $\frac{1}{2}$ hr.

Avoid stopping yourself - tell doc.

Scheme -

If treatment acute - complete rest. No treatment by gymnast. Sit - acetate & chrome tie & Examines.

2. Comfortable shoes & decent socks.

1. Breathing.

2. Run 1 mi. $\frac{1}{2}$ ly on side - R. leg & stick.

3. Leg Ex - to increase circulation - cycling.